TESTIMONY OF
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HEARINGS ON THE ENERGY POLICY ACT OF 2005

BEFORE THE
SUBCOMMITTEE ON ENERGY AND AIR QUALITY
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ABSTRACT

The United States needs a well-reasoned, balanced, and forward-looking energy policy. The draft Energy Policy Act of 2005 widely misses that mark. We favor legislation that would set a new course by encouraging clean renewable fuels and energy efficiency to gradually become the foundation of our nation's energy policy. We are a nation of innovators. The real energy solution for a greater national security, a strong economy, and a healthy environment is a lifeline of technology and efficient energy choices supplied by industries and workers at home, not a lifeline of oil. We would be less dependent upon foreign and dirty sources, would reduce the global warming threat, and would spend less on subsidies and on defending access to foreign oil if we embraced renewables and energy efficiency. Unfortunately, even at a time that the New York Times reports that big oil companies "are making more money than they can comfortably spend," this legislation props up the old system, subsidizes polluting energy, and fails to give clean renewable energy sources and efficiency their due.

In addition to the numerous missed opportunities to set the nation on a positive course, we have identified over 60 provisions in the draft that undercut environmental protections or undermine efforts to encourage use of clean renewable energy. Some areas are simply too environmentally sensitive to drill – like Arctic National Wildlife Refuge, much of the Outer Continental shelf (OCS), lands of wilderness quality, and roadless areas in our national forests. The nation's landmark environmental laws, like the National Environmental Policy Act, Clean Water Act, Safe Drinking Water Act, and Clean Air Act are critical to ensuring that energy development moves forward in a way that minimizes its negative impacts and limits controversy. Congress should not relax them. Despite advances in technology, energy exploration and development have lasting impacts. Energy development is changing the landscape of the West. It is depleting scarce water resources and destroying trout streams and farmers' fields. Meaningful environmental review and public participation are critical to diffusing controversy concerning energy development and to protecting our future.

Among the proposed changes in this bill and last year's energy legislation that cause us deep concern and that I will focus upon in my oral statement are the provisions that would impede progress on addressing the national problem caused by the gasoline additive MTBE, which has contaminated water across the nation and caused widespread drinking water contamination. MTBE is extremely soluble in water, persistent, poses health concerns including possible cancer and other toxicity risks, and renders water undrinkable. Rather than fixing this problem, the bill bars product liability lawsuits against refiners for clean up of past and future MTBE contamination, and would allow use for 11 more years. Moreover, the President may revoke the MTBE phase-out for any reason. At least 14 states have completely or partially banned MTBE; the bill may even preempt these state actions.

There is a related issue involving potential groundwater contamination with MTBE and other toxic materials. Hydraulic fracturing (HF) is a process of injecting fluids under pressure, sometimes containing MTBE, diesel fuel, or other toxins, to fracture underground formations to remove natural gas. A court has ruled that HF must be regulated under the highly flexible oil and gas-related provisions of the Safe Drinking Water Act. The balanced Congressionally-chartered National Drinking Water Advisory Council recommends that EPA retain its authority to regulate this potentially harmful practice. Congress should not impede this current authority.

We also are concerned about other possible revisions to water protections. Congress should not exempt oil and gas companies from storm water controls under the Clean Water Act as proposed in last year's bill. Storm water runoff can cause excessive sediment flow into waterways, harming drinking water supplies and aquatic life. Similarly, we are concerned about proposals that could undermine or fail to assure needed improvements to the LUST program. We oppose proposals to undercut the polluter pays principle by prohibiting cost recovery from polluters if their ability to stay in business is "significantly impaired" (an undefined term), and believe tanks should be inspected every 1-2 years. The bill should also require secondary containment of new replacement pipes and tanks.

Introduction & Overview

I am Erik D. Olson, a Senior Attorney at the Natural Resources Defense Council (NRDC), a national non-profit organization with over 500,000 members dedicated to the protection of public health and the environment. I also serve as chair of the Campaign for Safe and Affordable Drinking Water, an alliance of over 300 public health, medical, consumer, environmental, and other organizations seeking to assure safe drinking water at a reasonable price to all Americans, though today I do not appear on behalf of the Campaign.

Missed Opportunities

The draft energy legislation appears little different than HR 6 of the 108th Congress. Last year's HR 6 would have done little to address high energy prices or our dependence on foreign oil and gave away billions of dollars in subsidies to polluting industries. We also identified over 60 anti-environmental provisions in the bill, from exemptions to laws that protect clean air and drinking water to statutes that protect streams and wetlands. This year's energy bill appears to be full of the same missed opportunities to enhance our energy security and favors industry over public health or environmental protections.

My testimony focuses primarily upon the public health implications of this energy bill, particularly with respect to provisions concerning the toxic gasoline additive MTBE, Safe Drinking Water Act regulation of hydraulic fracturing, and clean water protections. Part 1 of my written testimony focuses primarily on MTBE. Part 2 briefly notes another important water issue likely to be addressed in the energy legislation, the use of hydraulic fracturing in oil and gas activities, which may harm water supplies. Part 3 highlights what the oil industry knew about MTBE problems, and when they knew about them, and was written by the Environmental Working Group. Part 4 addresses concerns with Clean Water Act revisions that have arisen during the energy bill debate.

Energy Security

The United States uses over 25% of the world's oil each year and yet has just 3% of the world's oil and gas reserves. America's dependence on oil is a threat to our national security, our economy, and our environment. A significant portion of the world's oil is in regions that are openly hostile to America. The United States cannot drill its way to energy independence, because our reserves will never be enough to meet our growing demand for fossil fuels. We will continue to rely on foreign oil unless our oil consumption is reduced through conservation and the development of renewable sources. Energy efficiency is the fastest way for American to increase our oil independence and reduce our use of other polluting sources of energy, such as coal and nuclear power, yet this year's energy bill lacks meaningful efficiency standards for vehicles or buildings, and fails to make significant investments in renewable energy.

America is a nation of innovators. The real energy solution for a greater national security, a strong economy, and a healthy environment is a lifeline of technology and efficient energy choices supplied by industries and workers at home, not a lifeline of oil. The United States must begin immediately to ease our intense oil addiction, first by making a national commitment to save 2.5 million barrels of oil per day by 2015. A key component of such a plan would increase the efficiency of cars and trucks, since the transportation sector will be responsible for 80% of the oil demand through 2020.

NRDC believes that a healthy environment goes hand in hand with a healthy environment. We believe that this country can continue to have strong economic growth and a high standard of living while reducing our oil dependence and cutting pollution. This can be achieved by investing in America.

Congress' Duty to Protect Public Health

The oil and gas industry are enjoying record profits while consumers are paying record prices at the pumps. The New York Times reports that oil companies have a "burden of too much cash," explaining that the are so "flush with cash, they find themselves in a paradoxical position - they are making more money than they can comfortably spend."[1] And yet the same industry has come before Congress today to ask for subsidies, royalty relief, and permission to drill in special places that the American public holds sacred, exemptions from bedrock public health and environmental laws, and liability limits for industry-related groundwater contamination.

The nation's landmark environmental laws, like the National Environmental Policy Act, the Clean Water Act, and the Clean Air Act, are critical to ensuring that energy development moves forward in a way that minimizes its negative impacts and limits controversy. Congress should not relax these laws. Despite advances in technology, energy exploration and development have lasting impacts on the environment and potentially human health. Energy development is changing the landscape of the West. It is depleting scarce water resources and destroying trout streams and farmers' fields. The key to accelerating energy development is to identify these impacts and address them.

Public Participation

Meaningful environmental review and public participation are critical to diffusing controversy concerning energy development. Increased drilling activity in the West has caused real damage on the ground. Ranchers, farmers and others have seen their domestic water wells run dry due to gas drilling activities; had domestic and agricultural water supplies tainted or poisoned by drilling fluids and waste products; lost agricultural crops to water pollution; lost favorite hunting grounds to industrial development; seen increased community

costs for maintenance of roads, bridges and other infrastructure; suffered a decline in real estate values due to industrialization of their property and adjoining lands; and experienced a general decline in the quality of life that is central to the economic vitality of the American West. The key to accelerating energy development is to identify these impacts and to address them.

As the National Commission on Energy Policy recommended, the federal agencies responsible for managing our public land resources need more money. Increased appropriations are important not simply to get permit applications reviewed faster, but also to "improve monitoring and data collection."

PART 1.
MTBE: WATER QUALITY CONCERNS, AND THE NEED FOR FEDERAL LEGISLATION

Overview of the MTBE and Air Pollution Issues

It is nearly impossible, and very expensive, to remove MTBE from water supplies once they become contaminated. USGS data show about 5% of public water supply wells contain MTBE, and 15% of drinking water supplies in MTBE use areas contain this chemical. Widespread leaking underground storage tank (LUST), spills, and other sources are responsible. Most MTBE pollution is below EPA's 20-40 ppb advisory level, but there are many contamination incidents above this level. A map of MTBE contamination incidents is included in this testimony. This widespread contamination and the high costs of cleanup are why we, and state and local governments, vigorously oppose any MTBE liability waivers.

It has been argued that the oil industry was "forced" to use MTBE as part of the 1990 Clean Air Act's oxygenate mandate, and that therefore the industry should not be held responsible for the widespread water contamination. This is a distortion. Neither EPA nor Congress ever mandated that industry use MTBE. Elements of the petroleum industry urged the use of MTBE, even though internal industry documents show that industry knew at least in the early 1980s that MTBE was highly mobile, highly water soluble, highly persistent, and could render water unusable at low levels. The industry was aware that many of its tanks were leaking fuel, often including MTBE. A court held major oil companies responsible for acting "with malice" in failing to warn the public about MTBE.

We support legislation that would phase out MTBE and would eliminate the 2% oxygenate requirement, while maintaining air quality benefits. We do not favor an ethanol mandate. The "deal" that was struck previously in the Senate was marred by a deal-breaker amendment that preempted both state and federal liability for oil company contamination of

water supplies by “renewable fuels.” This was expanded in a House counter offer to include MTBE. We strongly oppose any provision that would eliminate any legal tools available to local governments, water suppliers, or others harmed by contamination of water supplies. Industry knew about MTBE problems and could have controlled them, and must have the incentive to minimize and address the impacts of new fuels and additives

The bill weakens the Reformulated Gasoline (RFG) and related clean fuels programs, the bill weakens the Reformulated Gasoline (RFG) and related clean fuels programs, and fails to ban the gasoline additive MTBE, which has contaminated water in all 50 states and caused widespread drinking water contamination, for 11 years. The President may revoke the MTBE ban for any reason. The bill may even preempt states from banning MTBE, and bars product liability lawsuits against refiners for clean up of past and future MTBE contamination. Even though the bill eliminates the oxygen requirement in RFG, refiners can use as much or as little MTBE as they want with impunity. Dirty air areas will continue to refuse to adopt RFG for fear of MTBE contamination.

Provisions in the legislation would undercut clean air protections, as is discussed in the attached statement by David Baron of Earthjustice. The bill prevents dirty air areas from adopting alternative clean fuel requirements without MTBE such as that used successfully in Atlanta. It permits RFG fuels marketers to exceed RFG volatility requirements up to 20 days each ozone season (Fuel volatility could reach 25% above specifications). In addition, the bill allows EPA to extend smog cleanup deadlines for meeting both the one-hour and eight-hour health standard without requiring additional cleanup measures. The extension criteria are so vague that dozens of areas in over 25 states may be able to delay compliance with the ozone standard.

The bill allows EPA to delay dirty air areas in western Michigan from being identified and subject to eight-hour smog clean up requirements, and fails to include measures to

protect air quality from smog increases that may come from dramatically increasing ethanol use in conventional gasoline required by the Renewable Fuel Standard (Title XV), especially in areas that exceed the eight-hour ambient air quality standard for ozone (smog).

Why MTBE?

Because of serious air pollution triggering smog alerts in many "non-attainment" areas around the nation, EPA began investigating changes in fuel supplies that could result in air quality improvements. For many years EPA was investigating the possible widespread use of methanol (a chemical cousin of ethanol) as a fuel. The petroleum industry, on the other hand, had another idea: reformulated gasoline that was produced from a byproduct fraction of petroleum cracking that for years had little market, called methyl *tert*-butyl ether (MTBE). MTBE could be used as an "oxygenate," elements of the petroleum industry argued, and would reduce carbon monoxide emissions and ozone levels in the atmosphere, leading to air quality benefits.

1990 Clean Air Act Amendments

In enacting the Clean Air Act Amendments (CAA) of 1990, Congress required the use of oxygenates in gas, in order to improve air quality. The use of oxygenates makes gas burn cleaner. The oxygenate requirement also was enacted in part because Congress hoped to give a big boost to the *ethanol* industry, which can use distilled "biomass" to make this alcohol. Instead of switching mostly to ethanol, the petroleum industry chose to use MTBE as the oxygenate of choice. MTBE use skyrocketed (see figure 1). By 1998, MTBE became "the second most-produced organic chemical in the U.S.," with about 10 million gallons used per day.[2]

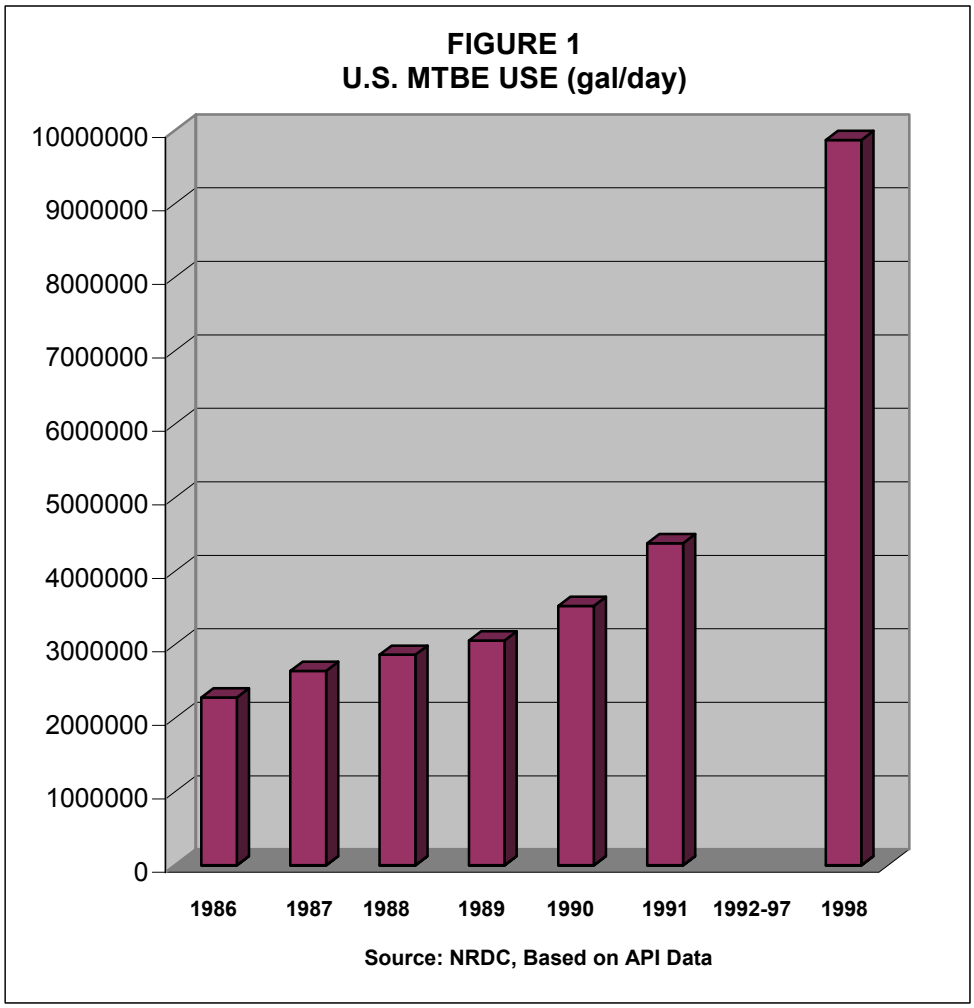
EPA Blue Ribbon Panel on MTBE

EPA's Blue Ribbon Panel on MTBE concluded that the Reformulated Gasoline Program (RFG) established in the Clean Air Act Amendments of 1990 "has provided substantial reductions in the emissions of a number of air pollutants from motor vehicles…." The reductions were greater, in fact, than legally required. The panel also noted that "there is disagreement about the precise role of oxygenates [such as MTBE] in attaining the RFG air quality benefits," though oxygenated fuels did, the panel concluded, probably reduce emissions. But in large because of the water quality problems caused by MTBE, the panel recommended:

- "Action…to reduce the use of MTBE substantially (with some members supporting its complete phase-out), and action by Congress to clarify federal and state authority to regulate and/or eliminate the use of gasoline additives that threaten drinking water supplies;

- "Action by Congress to remove the current 2 percent oxygen requirement to ensure that adequate fuel supplies can be blended in a cost-effective manner while quickly reducing usage of MTBE; and

- "Action by EPA to ensure that there is no loss of current air quality benefits."



Serious Concerns about Water Quality

While MTBE may have contributed to improved air quality in some communities, the bad news is that MTBE is extremely soluble in water, far more soluble than hydrocarbon components such as benzene, toluene, and xylene (see Figure 2).

Industry Knew Long Before 1990 CAA Amendments MTBE Was a Problem

As discussed at length in Part 3 in this testimony, internal oil industry documents that were only released in litigation show that the oil industry well aware of MTBE's water-contaminating properties before the 1990 Clean Air Act Amendments. These documents also

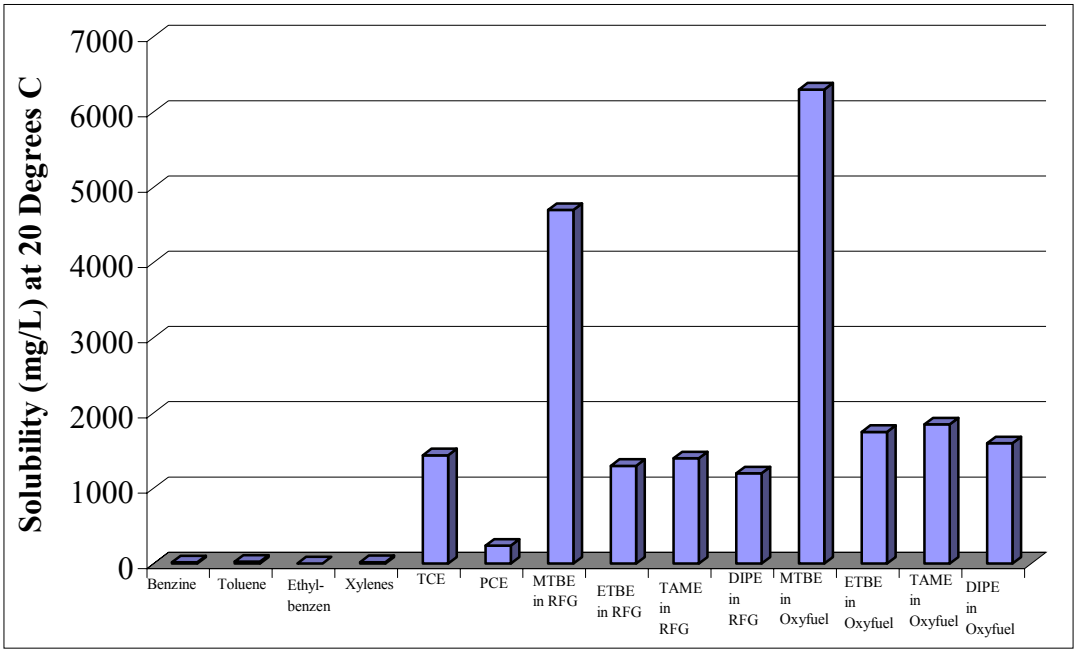
show that the industry was aware that spills or leaks containing MTBE spread very fast, and were extremely difficult and expensive to clean up. Indeed, by 1981, a Shell scientist wrote an internal report on an MTBE contamination problem and the difficulties of cleanup. The joke inside Shell was that MTBE really stood for “Most Things Biodegrade Easier;” later, other versions of the joke circulated, including “Menace Threatening Our Bountiful Environment,” or “Major Threat to Better Earnings.”

These and many other facts, documents, and testimony were considered by the jury that found that there was “clear and convincing evidence” in the South Tahoe case that Shell Oil and Lyondell Chemical Company (ARCO chemical Company) acted “with malice” in selling gasoline containing MTBE both because it was “defective in design” because the risks of harm outweighed its benefits, and because of their failure to disclose the threats posed by MTBE.[3] Several other oil company defendants opted to settle the case before these findings were rendered.

Other MTBE Chemical Cousins May Also Present Problems

Other ethers being considered as gasoline additives, such as ethyl-tert-butyl ether (ETBE), *tert*-amyl methyl ether (TAME), and di-isoproyl ether (DIPE) also are extremely soluble, like MTBE. (Figure 2). The high solubility of MTBE has lead to widespread contamination of groundwater and surface waters across the nation.

FIGURE 2: SOLUBILITY OF HYDROCARBON COMPOUNDS VS. MTBE AND OTHER ETHERS



Source: NRDC, using data presented in Johnson et al., USGS, 2000

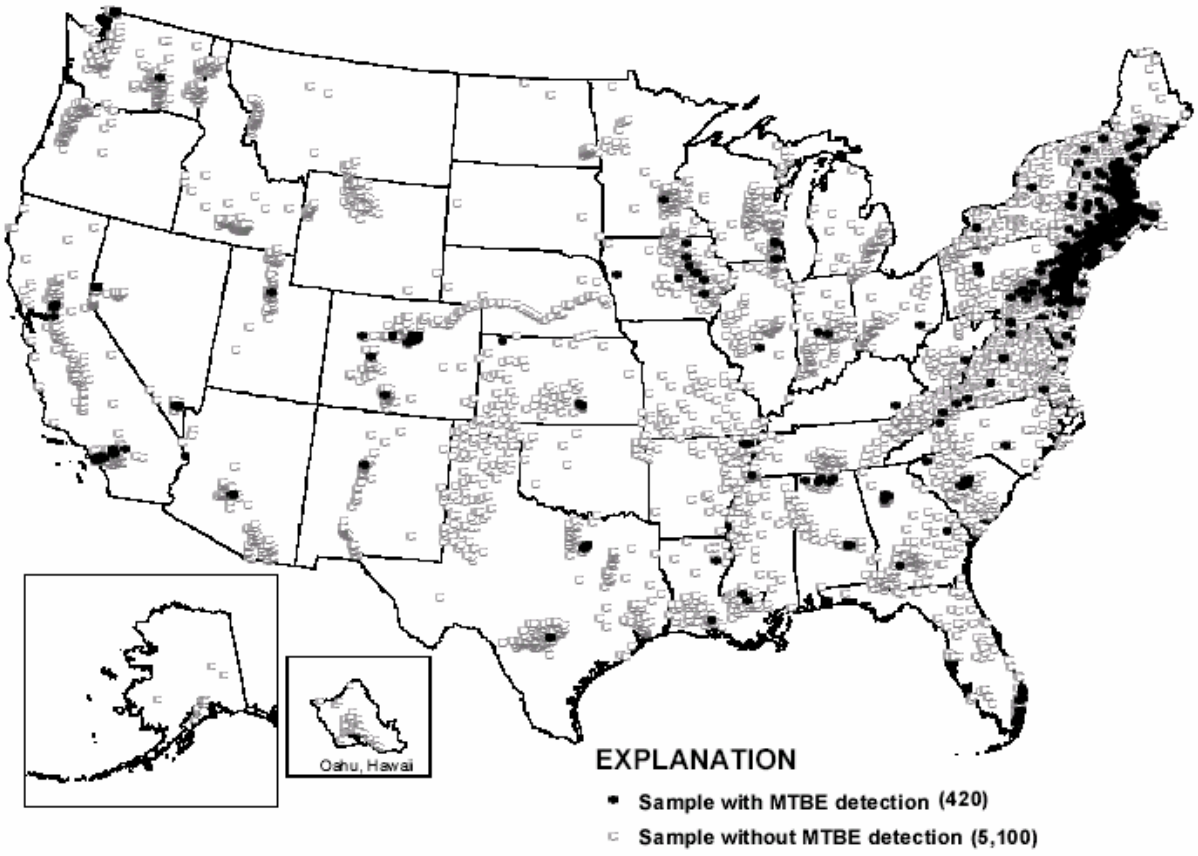
Widespread MTBE Contamination of Water

According to estimates from U.S. Geological Survey (USGS) experts, there may be 250,000 leaking underground storage tank (LUST) releases of MTBE.[4] Pipeline releases, gas spills, and other sources also contaminate groundwater and surface water with MTBE. USGS estimates that about 35% of community water system wells are located within 1 km of a LUST (9000 wells).[5]

Recent (March 2003) USGS data indicates that about 3% of groundwater wells in the U.S. contain MTBE, and about 5% of source waters contain MTBE (FIGURES 3 & 4).[6] Testing also indicates that MTBE is often found in tap water—about 9% of water supplies in the Northeast that were tested.[7] About 15% of drinking water in the high MTBE use areas in the Northeast contained MTBE.[8] Most is found at relatively low levels; about 1% of northeastern drinking water exceeded the low end of EPA's advisory level (20 ppb).[9]

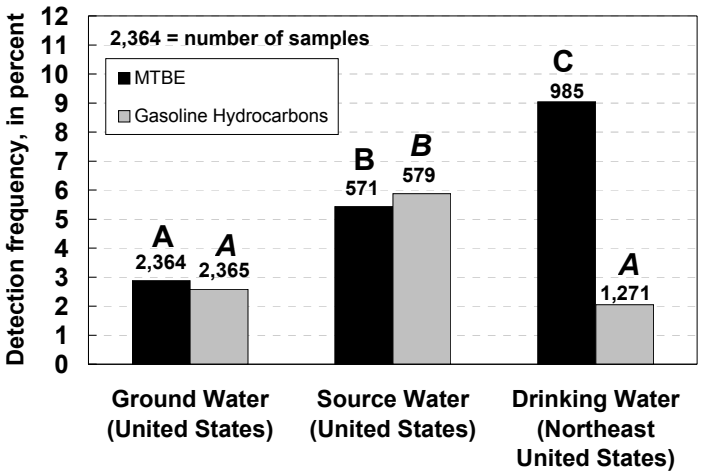
FIGURE 3

USGS DETECTIONS OF MTBE



(Source: Moran, Zogorski, and Squillace, 2003)

FIGURE 4: FREQUENCY OF DETECTION OF MTBE



(Source: Moran, Zogorski, and Squillace, 2003)

Health Concerns With MTBE

MTBE contamination of drinking water poses health concerns, but as is usually true with chemical contaminants, there remains some uncertainty as to how serious these risks are. EPA has found that MTBE may be a carcinogen, but has not reached a final verdict on the issue. There have been reports of acute human-health effects of MTBE such as nausea, dizziness, and headaches by people exposed to MTBE-containing fuel vapors in air, though some argue that these symptoms have not been clearly linked to MTBE exposure.[10] The human-health effects of long-term inhalation or oral exposures to MTBE are unknown.[11] However, there is some evidence of possible reproductive and developmental effects.[12]

There are no published studies evaluating MTBE and cancer in humans, but MTBE has been shown to cause cancer in rats and mice exposed by inhalation or orally.[13] Federal agency reports indicate that MTBE should be regarded as posing a potential cancer risk to people based on animal cancer data.[14] Although EPA has concluded that "MTBE poses a potential for human carcinogenicity at high doses" based on animal data, EPA says that these animal data "do not support confident, quantitative estimation of risk at low exposure"[15] EPA has based its Drinking Water Advisory upon taste and odor thresholds (20 to 40 µg/L) in humans, and has not yet established any enforceable health standard for MTBE.[16] Consumer rejection due to taste and odor of MTBE often has been a factor in water utility decisions to stop using or to treat water sources contaminated with MTBE.

State Actions Banning or Restricting MTBE

In response to widespread concerns about MTBE contamination, at least 17 States have adopted bans or serious restrictions on MTBE usage, and two have required intensive studies of MTBE contamination.

Need for federal Legislation

There is an urgent need for federal legislation that would:

- *Ban MTBE, while maintaining air quality.* Congress needs to step in and enact a clear MTBE ban, but should accompany this with a requirement that air quality benefits of reformulated gas not be reduced. While there have been huge pollution reductions in smog and cancer-causing air toxics from the switch to reformulated gasoline, Congress can no longer ignore the harm being done by gasoline and MTBE leaking into drinking water supplies. Oil refiners have the ability to produce gasoline that achieves just as much air pollution reduction without oxygenates such as MTBE, but the law currently mandates their use. Congress should act immediately to repeal the mandate. It makes no sense to have a patchwork approach to this problem with 15 to 20 states banning MTBE; if Congress doesn't act and state bans go into effect, this could create needless confusion and burdens for consumers.
- *Prohibit oil companies from producing a fuel that is less effective at reducing smog and toxic air pollutants than the RFG sold today* when they remove oxygenates. We do not need to take a step backward in combating air pollution in order to protect groundwater.
- *Eliminate the 2% oxygen mandate*. We agree with numerous state officials, health groups, and API that Congress must lift the oxygenate requirement (and ban MTBE) while maintaining air quality benefits.
- *Give EPA clear authority to regulate fuel additives based upon air <u>and</u> water quality impacts* (the previous Senate energy bill would have embodied this authority; the House counter-offer did not).

- *No ethanol mandate*. The legislation should set standards for gasoline performance, rather than mandate a particular solution to the problem.
- *Encourage use of clean, renewable biofuels made from biomass,* which reduce global warming while improving air quality and reducing water risks.

No Waiver or Preemption of State or Other Liability for Fuel Contamination

Our most overwhelming concern is that the legislation should not include any waiver or preemption of state or other liability for renewable fuels or MTBE. Legislation including a so-called "safe harbor" provision would preempt state law and effectively remove tools available to states and municipalities to remedy tap water contamination problems from fuel containing "renewable fuels." Such a provision would block lawsuits alleging that gasoline is a defective in design or manufacture because it contains such renewable fuels. A similar Senate measure previously was answered by a House conferees' offer that would have expanded this waiver of liability and preemption to MTBE.

Such a waiver of liability and preemption of State law is an unacceptable overreach that will hurt the public, local governments, the environment, and will encourage irresponsible corporate behavior. As the South Tahoe jury found after an extensive trial and review of an enormous number of industry documents and witnesses, many in the oil industry knew of the risks of MTBE, and irresponsibly failed to act or to warn the public or their customers.

Well before Congress enacted the 1990 CAA, the oil industry was aware of the risks posed by MTBE to water supplies, of the difficulty of cleaning up spills and leaks, of the persistence of MTBE, and of the fact that many oil storage tanks were leaking. Elements of the oil industry knew of problems a long time ago, and according to the California jury, acted "with malice" in failing to disclose these risks. As between this highly culpable oil industry that knew about the problem, failed to remedy it, and profited from the sale of their defective

product, and the public water supplies that had nothing to do with creating the problem, and would have to bill their customers to remedy it, who should pay for the cleanup? Clearly, the oil industry should not be let off the hook for this liability. Why deny an important tool to local government and water utilities to address this important drinking water quality and potential health problem?

A liability waiver and preemption also would create unacceptable incentives for manufacturers to introduce defective products. What will be the next MTBE? TAME? DIPE? ETBE? Why do the renewable fuels manufacturers need such liability protection? Do they know of problems with their products that they are not telling Congress or us about, much like the oil industry was not very forthcoming about the problems with MTBE before it came into such widespread use?

The petroleum industry is clearly in best position to know about and to take action to avoid another MTBE. Industry must have the incentive to minimize the impacts of new fuel additives or new fuels.

. In a previous congress, there was a strong alliance behind a sensible solution to the MTBE and oxygenate problem, which included API. The liability waiver and preemption was added after that deal was cut, and is a deal breaker. We oppose any legislation that contains the provision as part of the energy bill.

PART 2

THE NEED TO REGULATE HYDRAULIC FRACTURING TO PROTECT UNDERGROUND SOURCES OF DRINKING WATER

There is another threat to drinking water and ground water by chemicals also used in gasoline and diesel fuel that is worthy of discussion and protective action by Congress. Hydraulic fracturing is a well development process that is designed to increase the yield of natural gas from underground rock formations, including coal. Fluid is injected down a well and into a rock formation at very high pressure in order to break up the rock formation and enable more gas to flow toward the well after all the groundwater has been removed.

Hydraulic fracturing fluid commonly contains many toxic chemicals that pose a significant threat to underground sources of drinking water. The carcinogen benzene, and MTBE, diesel fuel, and many other chemicals are known to be used in hydraulic fracturing fluids. It is well known that very small volumes of potent chemicals like benzene and MTBE can contaminate millions of liters of ground water. In recent years, that has been painfully obvious as MTBE contaminated ground water and surface water across the country. Just 28 tablespoons of MTBE could contaminate millions of liters of ground water at concentrations that would render it unusable.[17] It is important to note that the large number of coal bed methane wells planned in the US are of particular concern because their depths are relatively shallow and 10 of the 11 coal basins in the US are likely to lie, at least in part within existing underground sources of drinking water.[18]

A report by EPA revealed that many of the estimated concentrations of chemicals used in hydraulic fracturing fluids at the edge of the fracturing zone exceed the drinking water maximum contaminant levels (MCL) – even with an estimated dilution effect of 30.[19] The EPA report reveals that the estimated concentration of the carcinogen benzene is twice the

drinking water MCL. The estimated concentrations of other chemicals exceed their MCLs by much greater factors – 431 times the MCL in the case of methanol.[20]

There are a very limited number of empirical scientific studies that have evaluated the behavior of these chemicals in the subsurface and their effects on groundwater quality. The toxic chemicals used in fracturing fluid can be continuous sources of ground water contamination since, as the EPA report reveals, as much as 39-75% of fracturing fluids remain in the ground.[21]

After briefing some staff from the House Energy & Commerce committee in 2002, it was discovered that EPA's calculations for estimated subsurface concentrations of chemicals of concern were based on values that were not consistent with data in their report that resulted in estimated concentrations 10 times lower.[22] [23] A January 2003 article in Environmental Science & Technology includes the suggestion by a USGS hydrologist that EPA's dilution factor of 30 is not justified and that even if "only 20-30% of the fracturing fluids remain in the formation and the fluids include diesel fuel, the aquifer would be destroyed because the diesel will remain as a contaminant for generations." [24]

The near-impossibility of cleaning up underground sources of drinking water once they have become contaminated is precisely why Congress acted with precaution to protect existing and future sources of drinking water in the Underground Injection Control provisions of the Safe Drinking Water Act. Preventing widespread contamination of drinking water is far less expensive than attempting to clean it up later.

EPA's Congressionally-chartered National Drinking Water Advisory Council, comprised of representatives of the water industry, state and local governments, public health experts, consumers, environmental groups, and others, unanimously adopted a resolution December 12, 2002 urging the Administrator "to work through voluntary and/or regulatory means as appropriate in order to eliminate the use of diesel fuel and related additives in

fracturing fluids that are emplaced in geologic formations containing sources of drinking water." Furthermore, the National Drinking Water Advisory Council urged the Administrator "to defend as necessary the US EPA's existing authority and discretion to implement the Underground Injection Control Program in a manner that advances the protection of our ground water resources from contamination." Support for oversight of state Underground Injection Control programs by EPA is growing in many states as they face serious budget shortages.[25]

We are very concerned about provisions in the legislation that addresses hydraulic fracturing. EPA should conduct meaningful field investigations that include collection and analysis of groundwater samples and installation of monitoring wells. In addition, EPA must retain its authority to oversee state regulation of hydraulic fracturing through the Underground Injection Control program to prevent contamination of underground sources of drinking water – consistent with Congress' intentional precautionary action via the Safe Drinking Water Act.

PART 3:
MTBE:
WHAT THE OIL COMPANIES KNEW AND WHEN THEY KNEW IT

Internal Industry Documents Are Rewriting The MTBE Pollution Story

In 2002, the Environmental Working Group released a report summarizing a series of internal oil industry documents that highlight the true story about MTBE. That report, available in full at www.ewg.org, is excerpted in this section of the testimony (web links to electronic versions of the industry documents cited in this testimony are included for readers of the electronic version of the testimony; readers or the written testimony can access these document at the website above).

The proposed legislation would strictly limit oil company liability for contaminating groundwater in at least 35 states with MTBE. The industry says it's only fair to shield MTBE makers from lawsuits, since, they claim, it was the government that mandated oil companies to reformulate gas with MTBE in the first place, to clean the air.

But a different story has emerged from internal industry documents and depositions, made public in recent successful lawsuits brought by cities and Communities for a Better Environment that want oil companies to pay to clean up water made undrinkable and unhealthy by MTBE. The documents provided by lawyers involved in the litigation show that the oil industry itself lobbied hard for the MTBE mandate because they made the additive and stood to profit. A top ARCO executive admitted under oath, "The EPA did not initiate reformulated gasoline...." He clarified that "the oil industry... brought this [MTBE] forward as an alternative to what the EPA had initially proposed." [Excerpt | Full document]

By 1986, the oil industry was adding 54,000 barrels of MTBE to gasoline each day. By 1991, one year before the EPA requirements went into effect, the industry was using more than 100,000 barrels of MTBE per day in reformulated gasoline. Yet secret oil company studies, conducted at least as early as 1980, showed the industry knew that MTBE contaminated ground water in numerous locations where it was used.

Oil companies are pressing Congress for liability protection because hundreds of communities have serious MTBE contamination problems, and company documents are coming back to haunt them in the courtroom. In April 2002, the documents convinced a California jury to find Shell, Texaco, Tosco, Lyondell Chemical (ARCO Chemical), and Equilon Enterprises liable for selling a defective product (gasoline with MTBE) while failing to warn of its pollution hazard, forcing a $60 million settlement with the water district for South Tahoe. [View document].

"The Government Made Us Do It"

As noted earlier in this testimony, MTBE is an "oxygenate" that makes gasoline burn cleaner and more efficiently. Unfortunately, it is also a foul-tasting, nasty-smelling, potential carcinogen that spreads rapidly when gasoline escapes from leaky underground storage tanks, contaminating sources of groundwater and drinking water from New York to California [View document]. Once in soil or water, MTBE breaks down very slowly while it accelerates the spread of other contaminants in gasoline, such as benzene, a known carcinogen.

Some communities, including Santa Monica and South Lake Tahoe, Calif., face tens or hundreds of millions of dollars in costs of cleaning up MTBE or replacing

contaminated water supplies. At least 17 states already have passed measures to ban or significantly limit the use of MTBE in gasoline; two more have required intensive studies. We believe that a federal ban is more a question of when than if.

Pressure is building to follow the lead of many states and ban MTBE nationally by the year 2006. Members of Congress from corn-producing states support the phase out in part because ethanol made from corn is the primary MTBE substitute. Other members sympathetic to oil industry concerns, in turn, are demanding that any ban on MTBE shield its makers from product-defect liability. The proposal apparently would not preclude suits against parties responsible for allowing MTBE to leak from storage tanks, but would provide immunity from suits claiming that MTBE itself was a defective product – precisely the charge that won a $60 million settlement for the South Tahoe Water District this year. The jury in that case found five oil and chemical companies liable for selling a defective product – MTBE –while failing to warn of its pollution risks. [View document]

The MTBE Papers

The paper trail, dating at least to 1980, tells a different story: How the oil companies took a byproduct fraction of gasoline refining that had little profitable use and created a profitable market. Beginning in the mid-1980s, well in advance of the 1992 federal mandate to reformulate gasoline to meet the standards of the Clean Air Act, elements of the petrochemical industry promoted MTBE to U.S. and state regulators as the additive of choice.

Thousands of pages of internal documents and sworn depositions from the producers at Shell, Exxon, Mobil, ARCO, Chevron, Unocal, Texaco and Tosco (now Valero) have come to light through a lawsuit by Communities for a Better Environment, a California public interest group. Many of the same documents were used in a suit by the South Lake Tahoe Water District against four oil companies and Lyondell Chemical Co. of Houston (ARCO Chemical Company), the nation's largest MTBE producer. In the CBE suit, several of the companies settled by agreeing to clean up MTBE spills at more than 1,300 California gas stations; the others continue to contest the case.

In 2002, a jury in the Tahoe case found Lyondell, Shell, Texaco, Equilon, and Tosco guilty of irresponsibly manufacturing and distributing a product they knew would contaminate water. In addition, the jury found by "clear and convincing evidence" that both Shell Oil Company and Lyondell Chemical Company acted with "malice" by failing to warn customers of the almost certain environmental dangers of MTBE water contamination. [View document]

In an interview with *The Sacramento Bee*, the jury foreman said he found the MTBE papers, which demonstrated the industry's early knowledge that MTBE would threaten water supplies "among the most compelling evidence he recorded in 635 pages of handwritten notes." The foreman stated that "[t]here were lessons to be learned, but (Shell) didn't (learn them) because it saw money to be made in selling the product." After the jury verdict establishing liability, but before the jury could assess monetary damages, the companies settled the case for $60 million.

Oil Companies Knew MTBE Was a Threat to Water Supplies

Even though MTBE was not classified as a potential cause of cancer in humans until 1995, refiners knew much earlier that its powerfully foul taste and smell meant that small concentrations could render water undrinkable, and that once it got into water supplies it was all but impossible to clean up. A Shell hydrogeologist testified in the South Lake Tahoe case that he first dealt with an MTBE spill in 1980 in Rockaway, N.J., where seven MTBE plumes were leaking from underground storage tanks. [Excerpt | Full document] By 1981, when the Shell scientist wrote an internal report on the Rockaway plumes, the joke inside Shell was that MTBE really stood for "Most Things Biodegrade Easier." Later, other versions of the joke circulated, including "Menace Threatening Our Bountiful Environment," or apropos to the present attempt to limit liability, "Major Threat to Better Earnings." [Excerpt | Full document] and [Excerpt | Full document]

In 1983, Shell was one of at least nine companies surveyed by a task force of the American Petroleum Institute on "the environmental fate and health effects" of MTBE and other oxygenates. Shell's Environmental Affairs department replied to the trade association: "In our spill situation the MTBE was detectable (by drinking) in 7 to 15 parts per billion *so even if it were not a factor to health,* it still had to be removed to below the detectable amount in order to use the water." (emphasis added). [View document] The survey, the results of which were later distributed to all API members, asked for information about the number and extent of spills, chemical analysis of the spill and the contaminated water, and health effects to people in the community.

Clearly, Shell was not the only company that knew about MTBE problems. An environmental engineer for ExxonMobil (the companies merged in 1999) testified that he learned of MTBE contamination from Exxon gasoline in 1980, when a tank leak in Jacksonville, Maryland, fouled wells for a planned subdivision. The ExxonMobil engineer said it was learned MTBE had also leaked into the subdivision's wells from a Gulf and an Amoco station. [View document]

Storage Tanks Were Known to be Leaking in the 1970s and 1980s

Refiners also knew that underground gasoline storage tanks were susceptible to leaks, a fact that would amplify the problem with MTBE. In 1973, an Exxon report on the problem said: "The subject of underground leaks at service stations is one of growing concern to gasoline marketers. Large sums of money, time, and effort are exhausted on a continuing basis in the location and detection of leaking tanks and lines." [Excerpt | Full document]

In 1981, an ARCO memo said leaking tanks were "a major problem.... The issue is essentially a health/safety and environmental one. Escaping vapors can seep into basements, sewers and conduits, creating not only a nuisance but the danger of explosion and/or fire. Escaping gasoline also enters and pollutes the water table. (Groundwater is a major source of the U.S. water supply.) Certain chemicals in gasoline (namely the aromatics like benzene) may be carcinogenic or toxic in certain quantities." [View document]

By 1980, Exxon had an annual testing program for tanks and found that 27 percent were leaking; two years later the failure rate was up to 38 percent. [View

document] In 1981, Shell and ARCO, the first refiners to add MTBE, estimated that 20 percent of all U.S. underground storage tanks were leaking. [View document] Five years later, in 1986, the EPA concurred. [Excerpt | Full document] Prior knowledge of the extent of leaking gasoline storage tanks was a major part of South Lake Tahoe's case: Fully aware that tanks were leaking, the petrochemical industry nonetheless introduced an additive known to rapidly percolate down to groundwater from gasoline distribution systems with known leaks. Efforts were ongoing to upgrade storage tank systems, but when industry learned quickly that the new tanks were still leaking, it continued to expand the use of MTBE anyway.

The Industry, not the EPA, Promoted MTBE as an Oxygenate

Recently disclosed court documents clearly show that the oil companies, not state or federal regulators, were the boosters of MTBE. The industry developed and promoted the concept of using reformulated gasoline to reduce air emissions, assuring the EPA that reformulated gasoline would be better than other options being considered. ARCO Chemical Co.'s Manager of Business Development from 1987 to 1998 testified: "What I recall is the EPA actually promoting using methanol blends... and the refining industry said here's another option... we can reformulate gasoline to reduce the emissions... that would be equal to or better than you would get by substituting or mandating the use of methanol vehicles... [T]he oil industry... brought this forward as an alternative to what the EPA had initially proposed." He continued, "The EPA did not initiate reformulated gasoline." [Excerpt | Full document]

Well before EPA mandated reformulated gasoline in 1992, the oil industry was aggressively promoting MTBE. According to the American Petroleum Institute, refiners were adding an average of 74,000 barrels of MTBE to gasoline per day from 1986 through 1991, roughly one third of the peak amount added to gasoline in 1998. [View document]

In 1987, a representative of ARCO Chemical (later absorbed by Lyondell), which was rapidly expanding its MTBE production, testified before the Colorado Air Quality Control Commission that the additive would reduce emissions and improve gas mileage, that supply and price were no barrier, and that consumers didn't need to be warned about the presence of MTBE in gasoline. [Excerpt | Full document] Nothing was said about the leak and contamination problems that ARCO and the rest of the industry had known about for at least seven years. ARCO's representative testified that in the 1980s he played a similar role in "assisting" the states of Arizona and Nevada in the development of oxygenate programs – programs that resulted in those states adopting MTBE. [Excerpt | Full document]

The Industry Attacked Safety Studies and Withheld Information From Regulators

In 1986, the Maine Department of Environmental Protection published a report documenting extensive MTBE groundwater contamination in the state. The authors identified MTBE as a "rapidly spreading groundwater contaminant" and discussed the option that "MTBE could be abandoned as an additive in gasoline stored underground" or that gas with MTBE "be stored only in double-contained facilities." [Excerpt | Full document] The Maine Paper was perhaps the earliest warning from government health

officials about the dangers of MTBE. To the oil companies, it was a call to arms. Documents show that even as they were internally disseminating this study and treating its findings seriously, the oil companies joined forces to attack the study's authors and the article's "damage" in an effort to discredit their findings and downplay the risks of MTBE.

The industry disinformation effort began even before publication of the paper. A 1987 ARCO memo details the continued attack on the authors and their research:

> "We initially became involved with the Maine DEP prior to the presentation of their first version of this paper at the National Well Water Conference on November 13, 1986... Since the paper was presented last November, we have been working with API, the newly formed MTBE Committee [of the Oxygenated Fuels Association], and on our view to assess the potential impact of this paper on state policymakers [and] to contain the potential 'damage' from this paper...." [View document]

The memo goes on to explain how the Maine Petroleum Council, the state affiliate of the API, was preparing a paper claiming that MTBE didn't speed up the spread of benzene in water, that MTBE "only spreads slightly further" than benzene and other contaminants, and that MTBE could be easily removed from water with existing technology – none of which is true. Internally, however, the industry admitted the Maine paper was a scientifically credible threat. A 1987 letter from an ARCO refining executive to his Unocal counterpart admits the MTBE task force didn't "have any data to refute comments made in the paper that MTBE may spread further in a plume or may be more difficult to remove/clean up than other gasoline constituents." [View document]

In 1987, at the same time that ARCO and API were leading the attack on the Maine Paper, EPA issued a request to the industry for "more information on the presence and persistence of MTBE in groundwater." As reported in 2001 by the *San*

Francisco Chronicle and *The Sacramento Bee*, ARCO responded: “Where gasoline containing MTBE is stored at refineries, terminals or service stations, there is little information on MTBE in groundwater. We feel that there are no unique handling problems when gasoline containing MTBE is compared to hydrocarbon-only gasoline.” [View document]

Internal Memos Warning Against MTBE Were Ignored

There were voices within the industry that warned against the use of MTBE, on grounds both of public health and cleanup costs from the inevitable leaks. A document dated April 3, 1984 from an Exxon employee said:

> “[W]e have ethical and environmental concerns that are not too well defined at this point; e.g., (1) possible leakage of [storage] tanks into underground water systems of a gasoline component that is soluble in water to a much greater extent [than other chemicals], (2) potential necessity of treating water bottoms as a ’hazardous waste,’ [and] (3) delivery of a fuel to our customers that potentially provides *poorer* fuel economy.... ” (Emphasis added.) [View document]

That same year, an Exxon engineer wrote the first in a series of memos outlining “reasons MTBE could add to ground water incident costs and adverse public exposure:”

> “Based on higher mobility and taste/odor characteristics of MTBE, Exxon’s experiences with contaminations in Maryland and our knowledge of Shell’s experience with MTBE contamination incidents, the number of well contamination incidents is estimated to increase three times following the widespread introduction of MTBE into Exxon gasoline....” Later, the document notes: “Any increase in potential groundwater contamination will also increase risk exposure to major incidents.” [Excerpt | Full document]

An Exxon memo from 1985 discusses MTBE’s “much higher aqueous solubility” than benzene and other gasoline components:

> “This can be a factor in instances where underground storage tanks develop a leak which ultimately may find its way to the underground aquifer. When these compounds dissolve in ground water and migrate through the soil matrix they separate into distinct plumes. MTBE creates the most mobile of the common

gasoline plumes. MTBE is not a known carcinogen like Benzene however we can be required by public health agencies to remove it based on its taste and odor characteristics." [View document]

Thus, it is clear that the oil industry was not only well aware of the fact the MTBE is extremely soluble, mobile, and persistent, but that leaks could and had seriously contaminated water sources, well before the Clean Air Act Amendments of 1990.

PART 4:
Clean Water Act Protections Should Not be Undermined

Congress should not exempt oil and gas companies from stormwater controls under the Clean Water Act as proposed in last year's energy bill. Stormwater runoff can cause excessive sediment flow into waterways, harming drinking water supplies and aquatic life. According to the 1998 National Water Quality Report to Congress, "Siltation is one of the leading pollution problems in the nation's rivers and streams. Over the long term, unchecked siltation can alter habitat with profound adverse effects on aquatic life. In the short term, silt can kill fish directly, destroy spawning beds, and increase water turbidity." (p. 68). In addition to runoff, at oil and gas production sites there is the additional problem of toxics including benzene, toluene and heavy metals. Construction of new drilling pads, pipelines and roads are often interspersed with existing ones where oil and waste products are present, and can be easily disturbed and enter our water sources.

Stormwater permits are therefore critical to protect clean water. The permits provide the mechanism to ensure that companies employ best management practices to limit the harm their activities impose on water quality. The Clean Water Act requires

permits for stormwater discharges associated with industrial activity. 33 U.S.C. § 1342(p)(3)(A). Construction is an industrial activity. EPA regulations mandate that all construction activities that disturb greater than one acre of land obtain stormwater permits. 40 C.F.R. §§ 122.26(b)(14)(x); 122.26(b)(15)(i); 122.26(e)(8). While the CWA currently contains an exemption from stormwater controls for oil, gas and mining *operations*, this exemption does not include *construction* of new sites prior to operation or construction of new roads or drilling pads at existing sites.

The permitting requirements are not onerous. The states generally issue permits under authority delegated from EPA. They rely in large part on general permits and the implementation of best management practices, many of which have been available for years. If the stormwater permit requirements are waived, oil and gas companies would not need to do anything to address the significant pollution of Western streams that their construction is causing.

ENDNOTES

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